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**NEW SPECIES OF HYDROPTILIDAE
(TRICHOPTERA).**

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Several species of undescribed Trichoptera have been taken in light traps in New Hampshire during the past few years. Among these were species of the genera *Hydroptila* and *Oxyethira*. The following seven new descriptions are based on male genitalia. Holotypes will be placed in the Illinois Natural History Museum, Urbana, Illinois. Paratypes will be placed in the above named museum and the Collection of the University of New Hampshire.

***Oxyethira rivicola* n. sp.**

Male: length from front of head to tip of wings 3 mm. This species is closely related to *O. grisea* Betten, *O. lumosa* Ross, and *O. novasota* Ross. Seventh sternite with a sharp, apico-mesal spur, Fig. 1S. Eighth segment with a stout, dark, apico-lateral spine. Genitalia as in Fig. 1. Subgenital plate hook shaped in lateral view, curved and pointed at the tip. Claspers fused, slightly concave on the meson, the ventral margin armed with a cluster of setae. Aedeagus, Fig. 1B, 0.5 mm. long; the spiral process encircles the aedeagus one and one half times. The apex of the aedeagus is divided into a sclerotized lobe and a semi-sclerotized lobe. The smaller lobe appearing pointed in some views, the dorsal side of this lobe is covered with small denticles, Fig. 1B1. The larger lobe is semicircular with margin crenulated when viewed laterally.

Holotype male: Lee, N. H., June 22, 1948, light trap. Para-

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types: Lee, N. H., June 22, 1948, ten males; Durham, N. H., July 8, 1951, fourteen males; Sept. 22, 1951, one male; Plymouth, N. H., June 24, 1948, three males; July 31, 1951, three males.

***Oxyethira sida* n. sp.**

Male: length from front of head to tip of wings 3 mm. This species is closely related to *O. rivicola*, described above. Seventh sternite with a sharp apico-mesal spur. Genitalia as in Fig. 2. Subgenital plate moderately sclerotized, broad at base and tapering sinuately to a pointed apex. Claspers fused on meson. Style sinuate, tipped with a long spine. Aedeagus, Fig. 2B, 0.43 mm. long. Spiral process encircles the aedeagus one and one half times and is longer than the main portion of the aedeagus, tip curved acutely. Apex of the aedeagus expanded, divided into two fingerlike, sclerotized lobes.

Holotype male: Lee, N. H., June 22, 1948, light trap. Paratypes: Lee: N. H., June 22, 1948, four males; Durham, N. H., July 7, 1951, five males; Sept. 22, 1951, three males.

Oxyethira michiganensis Mosely

Originally described by Mosely (1934) with the type locality listed as "Michigan." It is possible that the actual type locality may be the "Michigan Preserve" an area some twenty to thirty miles south of Ithaca, New York. This information was obtained through correspondence with Dr. Cornelius Betten. Dr. H. H. Ross of Illinois has informed us that *O. michiganensis* has not been taken in Michigan although Dr. J. W. Leonard of Michigan has collected extensively there for fifteen years.

Male: length from front of head to tip of wings 3.5 mm. Seventh sternite with a short, sharp apico-mesal spur. Apico-lateral margin of the eighth segment bearing a long process, Fig. 3A; a very long seta projecting from the tip of the process directed dorsad. This process with its seta has a "whiplike" appearance. Ninth sternite with numerous heavy setae apically, sternite rounded to an apico-mesal lobe. The posterior margin of the ninth sternite crenate in outline. Genitalia as in Fig. 3. Subgenital plate moderately sclerotized, curved, forming a semicircle in lateral view. Style sinuate, long, tipped with a short seta. In ventral aspect the subgenital plate somewhat U-shaped, the base connected, the apex divided into a pair of lobes directed mesad and not quite touching, Fig. 3C. Aedeagus 0.4 mm. long, Fig. 3B. Spiral process reaching almost to the tip of the aedeagus and encircling it for three

quarters of a revolution.

One hundred and fourteen specimens taken from the following New Hampshire localities: Durham, Hopkington, Lee, and Plymouth. July 8 to September 24.

***Hydroptila lonchera* n. sp.**

Male: length from front of head to tip of wings 2.75 mm. Seventh sternite with a short apico-mesal process. Eighth tergite, lateral view, Fig. 4A, with from three to five long, heavily pigmented spines on each apico-lateral margin; the spines are slightly more than one half the length of the eighth segment. In dorsal view, Fig. 4D, the eighth tergite is deeply incised and the spines are curved toward the meson. Apical margin of the eighth segment with numerous long setae. Genitalia as in Fig. 4. Tenth tergite, laterally, appears as a long arm projecting dorsad at an angle of thirty degrees, the apex of the arm membranous and expanded. In dorsal view, Fig. 4D, the tenth tergite appears as two long arms tapering gradually to an ovate apex. Claspers long, wider at base than apex, dorsal margin slightly concave, ventral margin irregular and toothed, Figures 4A and 4C. Aedeagus, Fig. 4B, 0.6 mm. long, base as long as apex and much expanded; spiral process encircling the neck of the aedeagus a little over one revolution and forming a crude figure eight.

This species will key out in Ross (1944) with those species having a short process on the seventh sternite. The aedeagus being similar to that of *H. grandiosa* Ross and *H. scolops* Ross.

Holotype male: Lee, N. H., August 15, 1948, light trap. Paratypes: Lee, N. H., August 25, 1948, five males; Durham, N. H., August 10, 11, and 14, 1951, five males.

***Hydroptila spinata* n. sp.**

Male: length from front of head to tip of wings 3 mm. This species is similar to *H. callia* Denning, however, it is easily distinguished from it by the short process on the seventh sternite and the row of spines on the eighth sternite. The seventh sternite bears a sharp apico-mesal spur, Fig. 5S, which attains the eighth segment. Eighth sternite in lateral view, projecting forward beneath the ninth; a row of heavily pigmented, stout spines along the apico-mesal margin of the eighth sternite. Genitalia as in Fig. 5. Tenth tergite, Fig. 5D, incised apically, the divided tips pointed, the tergite approximately the same width throughout its length in dorsal aspect. Claspers, Fig. 5E, long, wide at base, abruptly

narrowed apically; the long slender apical portion curved ventrally; two setae on the dorso-lateral margin, outer setae twice as long as inner. Aedeagus, Fig. 5B, 0.60 mm. long, base wide, narrowing immediately below neck; apex divided into three long parts. Spiral process, shortest of the apical parts, encircling the aedeagus for one half turn, curved at tip. Main part slightly sinuate, apical third marked giving it a spirally threaded appearance. Third part straight, tapering gradually to apex.

Holotype male: Lee, N. H., July 12, 1947, light trap. Paratypes: Lee, N. H., July 12, 1947, one male; August 6, 1947, two males; June 14, 1948, two males; August 25, 1948, one male; Plymouth, N. H., June 30, 1953, one male.

***Hydroptila novicola* n. sp.**

Male: length from front of head to tip of wings 2.5 mm. long. This species is closely related to *H. quinola* Ross. Seventh sternite with a short, sharp process. Genitalia as in Fig. 6. Subgenital plate, in ventral view, triangular, apex slightly forked, two spines at the apical one fifth of the plate. Claspers, ventral view, long with base broad and tapering to apex. A seta on the outer basal margin of each clasper. Aedeagus, Fig. 6B, 0.55 mm. long, basal portion longer than apical; base narrowing to neck, neck wide and round, apical and basal parts articulated in a ball and socket arrangement; apical portion tapering to pointed apex. Spiral process short and thin, encircling the narrow part almost completely and extending for a short distance along the apical part.

Holotype male: Durham, N. H., July 8, 1951, light trap. Paratypes: Durham, N. H., July 8, 1951, two males; Plymouth, N. H., June 30, 1953, two males.

***Hydroptila remita* n. sp.**

Male: length from front of head to tip of wings 3 mm. This species is related to *H. ampoda* Ross. Seventh sternite with a long apico-mesal process, Fig. 7S, tip of process curved, small serrations on apical margin. Internal part of ninth segment very long. Genitalia as in Fig. 7. Tenth tergite, in dorsal view, widest at middle and tapering to apex, Fig. 7D; apex emarginate. Base of tenth tergite two-thirds as wide as at the middle, apex one half as wide as at middle. Claspers sabre shaped, directed ventrad, base of clasper with dorsal projection bearing several long setae. Aedeagus, Fig. 7B, 0.80 mm. long. The two apical parts of the aedeagus entwined, Fig. 7BA. Apex of the main portion marked giving it

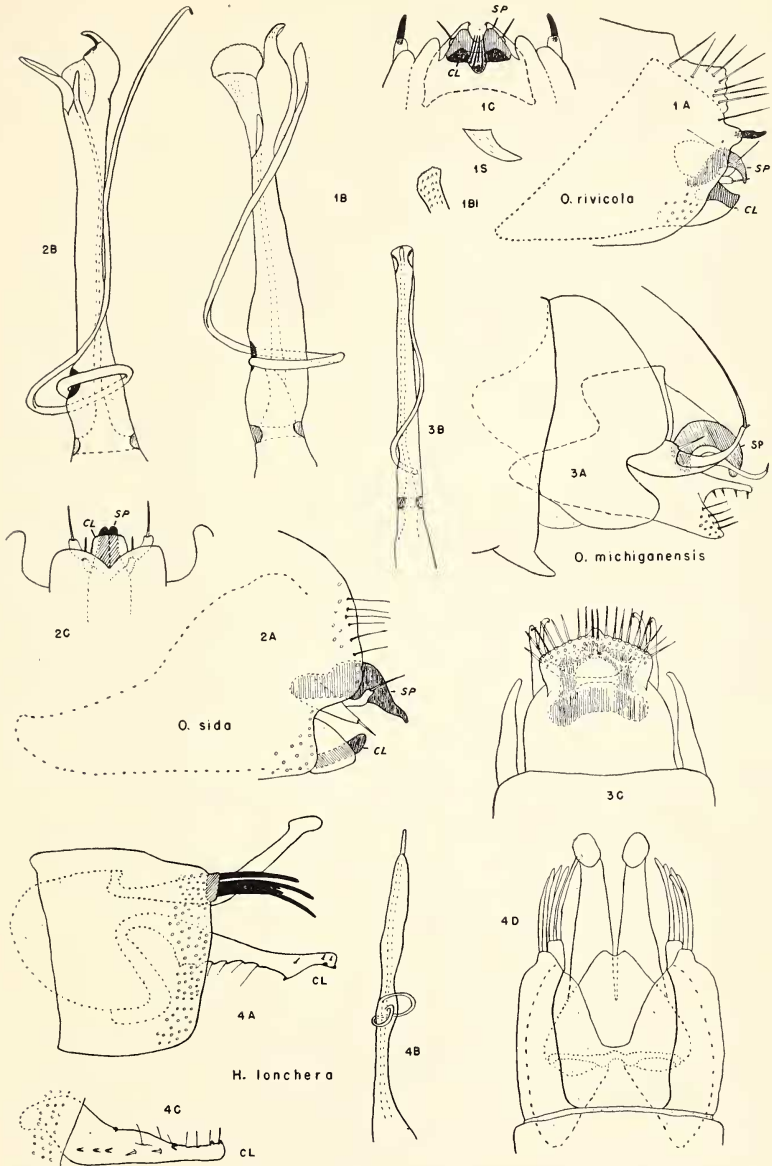


Plate V. *Oxyethira* and *Hydroptila*, male genitalia. A, lateral view. B, aedeagus. C, ventral. D, dorsal. Sp, subgenital plate. Cl, clasper.

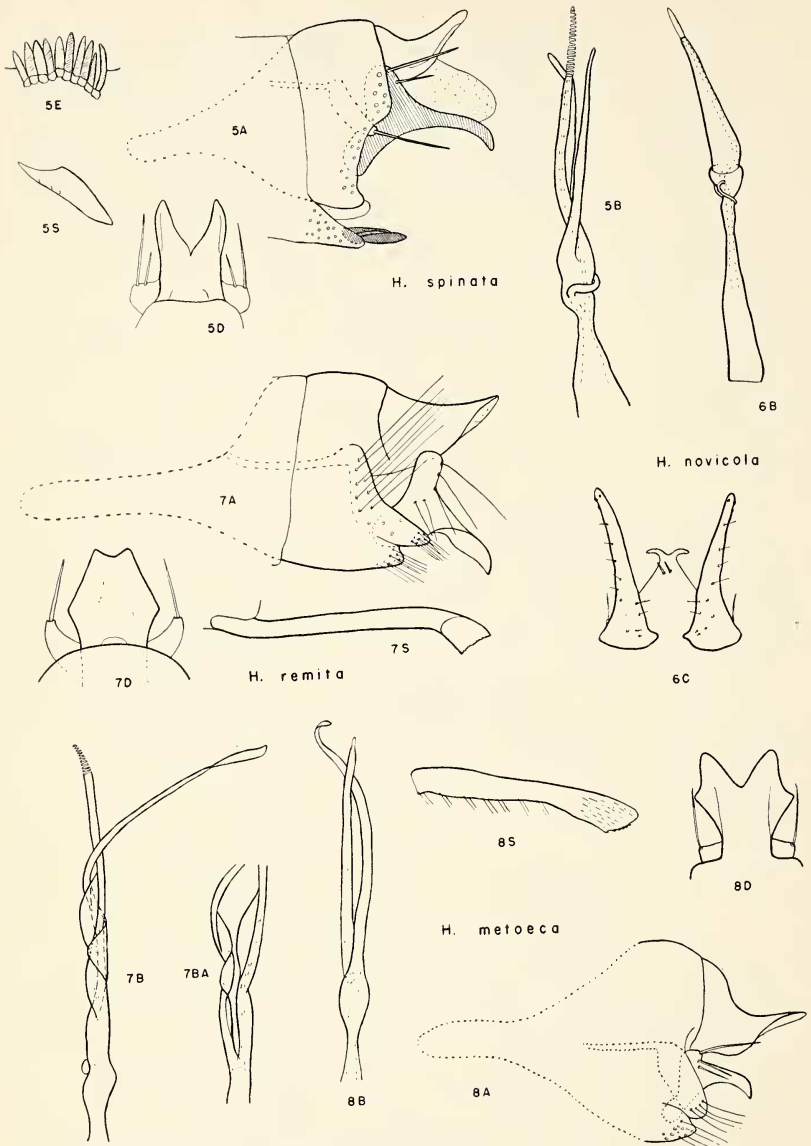


Plate VI. *Hydroptila*, male genitalia. A, lateral. B, aedeagus. D, dorsal. S, spine on seventh sternite. E, spines on eighth sternite.

a spirally threaded appearance. Spiral process long and curving away from main part.

Holotype male: Durham, N. H., Sept. 22, 1951, light trap.

Hydroptila metoeca n. sp.

Male: length from front of head to tip of wings 3.1 mm. long. Apico-mesal process of seventh sternite long, Fig. 8S, seven pairs of small hairs on the ventral margin of process. Genitalia as in Fig. 8. Tenth tergite narrow at base, Fig. 8D, widest about three fifths distant from base, slightly narrowed at apex, cleft apically for about one third the length of the segment. Clasper sabre shaped with a small dorsal projection. Aedeagus long, Fig. 8B, base and apex equal in length, apical part divided; spiral process curved about the shorter, straight main part.

This species is similar to *H. hamata* Morton. It is easily separated by the following: tenth tergite flared beyond the middle and incised more deeply; the spiral process being longer than the main part of the aedeagus; tip of the spiral process being curved evenly, in *H. hamata* the tip of the process is bent at right angles to the main process. The process on the seventh sternite is longer in *H. hamata*.

Holotype male: Lee, N. H., June 14, 1948, light trap. Paratypes: Lee, N. H., June 14, 1948, fourteen males; Durham, N. H., August 24-27, 1951, eight males; Plymouth, N. H., August 31, 1953, one male.

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